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THE JOURNAL OF THE FLORIDA MEDICAL ASSOCIATION
PUBLISHED MONTHLY

Volume III | St. Augustine and Jacksonville, Florida, March, 1917 | Number 9

ORIGINAL ARTICLES

OSTEOCHONDRITIS DEFORMANS JUVENILIS.*

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I want to present to the Society tonight a case that illustrates a condition which in the past has been confused with tuberculosis of the hip. It is important to us because it does simulate this disease so closely. For many years it was noticed that there was a certain type of hip disease classified as tuberculosis which ran a mild course and gave a much more favorable end result than the observer had anticipated. These were generally considered tuberculosis which had responded successfully to treatment. Although several attempts had been made to put these cases in a special class, it was Perthes who first described and classified them as a distinct, well-defined disease. This was in 1910. With an attempt to give a nomenclature based on etiology, he called the condition "osteochondritis deformans juvenilis," deforming osteochondritis of childhood.

One's first contact with the disease impresses him that he is dealing probably with a mild tuberculosis of the hip. It appears in children, chiefly boys, between the ages of three and thirteen; usually with limping as the only symptom. There may be apparent shortening and the patient sometimes complains of pain of a mild degree in the knee or down in the leg. One is forcibly impressed, however, with the severity of the limp as compared with the mildness or absence of any constitutional symptoms. The patient is almost without exception a strong, muscular child. He usually has no fever, does not have night cries, there is very little muscle spasm in the leg and no crepitation in the joint or pain on motion. The Von Pirquet and Wassermann tests are negative. Patient shows no signs of rickets. It is just this mildness of symptoms with negative tuberculin tests which first directs one's attention away from tuberculosis. The progress of the disease is always almost good and the end result good function, regardless of the treatment given. This, of course, is not true of a tuberculous joint.

The information obtained from an X-ray examination is in most cases diagnostic. There is atrophy with flattening of the epiphysis either into a caplike or mushroom shape and hypertrophic thickening of the neck of the femur with an appearance of coxavara. The epiphysis may be divided in separate pieces; the epiphyseal line is irregular and broader than normal. The bone does not show the typical "eaten-out" atrophy of tuberculosis. There are no hyperostoses nor apparent real erosion.

We are still in doubt as to the etiology. Almost all authorities agree at least that it is not tuberculosis, but is some form of obscure infective arthritis simulating very closely the osteoarthritis in older people; in fact, some observers have followed cases in adults which, they believe, are the direct continuation of this condition from childhood. Trauma probably plays some part in its etiology.

The case which we have had to report impresses us with the infectious nature of the disease. The patient when first observed ran a temperature of 100 degrees daily. We could not find any explanation for this other than the condition in the hip. It was noticed

*Read before the Duval County Medical Society, January, 1917.

when the hip was kept fixed in a cast that the patient's temperature ran nearer normal than when we let him up on crutches.

Treatment: Working on the supposition that the disease is infectious in origin, the first steps to be taken should be the clearing up of all possible foci of infection. In children, of course, the most usual focus is the tonsils. The teeth seem next in importance. Although it is not believed that the condition can be tuberculosis, it seems wisest with our present knowledge to give the joint some protection with braces until we are sure that the disease is not progressing. The point about the treatment is that it need not be strenuous as in tuberculosis and that we may look with optimism to the ultimate result.

H. I., No. 1874. Riverside Hospital. Boy 7 1-2 years old.

Complaint: Limp and pain in the right hip.

Family history: One of two healthy children, of healthy parents, no tuberculosis in family.

Past history: Child has always been robust and free from the usual infectious diseases of childhood. Has not even had measles. Not subject to sore throat or colds.

Present trouble: Five months ago the patient's mother noticed that the child was beginning to limp slightly after playing hard all day. Occasionally he complained of pain in the anterior part of his right thigh. This would not keep him awake at nights or come on after bedtime, no night cries. The child has had no cough and no fever has been noted. In fact, there has been no change in him from normal except the limp and occasional pain as mentioned.

Examination: Patient is a robust muscular boy, tonsils are somewhat imbedded and reddened. Glands are palpable in the neck, axilla and groin of about equal size and very small. When patient walks there is a limp in which he protects his right hip. There is free motion in the left in every direction; in the right, however, there is restriction of all the motions at the hip, especially abduction. There is no tenderness or crepitus. Measurements of the two legs show a very slight atrophy of the left with shortening of less than one-half inch. Urine examination, blood examination, Von Pirquet and Wassermann examinations are all negative. X-ray examination revealed what we interpreted as Perthes's disease or "osteochondritis deformans juvenilis." There was the typical flattening of the head, thickening of the neck and the characteristic bone texture of this condition. The tonsils were removed as a possible focus of infection. The hip was kept in fixation three months. After nine months patient has shown marked general improvement and the X-ray examination shows that there has been no change in the condition of the bone.
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THE TREATMENT OF FRACTURES OF THE HUMERUS AND FEMUR, WITH SPECIAL REFERENCE TO THE OPERATIVE METHOD WITH THE USE OF AN AUTOPLASTIC GRAFT.

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It is a well-recognized fact in the medical profession that the treatment of fractures is very far from satisfactory. This is partly because the general surgeon has largely neglected this field of surgery and has devoted the most of his thoughts to the treatment of abdominal and pelvic conditions. For this reason and because in this field is offered some of our most intricate and interesting surgical problems, I wish to discuss some of the reasons why our results are so lamentable in fractures of the humerus and femur, and point out some of the advantages of the open or operative treatment over the older conservative closed method of treatment.

The object of treatment in all fractures is the restoration of complete function and overcoming of the bony deformation—for every fracture must be regarded as a temporary deformity, and if it is allowed to become a permanent one, in most cases it will lead to impairment of the functions of the limb. Plate one illustrates this condition in which an oblique fracture of both bones of the leg was allowed to become united in a vicious position throwing the weight of the body on the inner side of the instep, which caused the patient considerable pain in his foot and ankle, and also caused a very ugly limp in walking. In this case, if the original surgeon did secure perfect reduction, his bad result was due to his failure to maintain the bones in proper apposition; which I regard as not so much the failure of the surgeon's skill as the failure of the method of treatment, which he adopted. It is no easy problem to retain an oblique fracture in perfect reduction, and it should always be borne in mind that proper retention is just as important as proper reduction in securing favorable results.

The X-ray has let in the light of day, and dispelled much of the mystery which formally surrounded the treatment of fractures. Radiology shows that the cause of persistent deformity is overlapping of the fragments or an exhuberant callus formation, frequently caused by the failure of our retention apparatus to properly immobilize the fracture ends. In addition to revealing the cause of many of our poor end results, the X-ray has been the means through this very discovery of creating in us a spirit of discontent, and stimulating us to look around for some surer means of overcoming

the deformity, and restoring function in our fractured limbs.

Particularly are we confronted with difficult problems of treatment in dealing with fractures of the humerus and femur. It is my experience, and is universally known that vicious union, pseudarthrosis or non-union are more frequent in fractures of the humerus and femur than in any other bones of the body. There are anatomical and mechanical reasons why this is so; the following explains why it is so difficult to obtain good end results in fractures of these bones by the closed method:

First. The humerus has muscles attached to it almost throughout its entire length, and when the sharp ends of the fragments become displaced they probably become fixed in the surrounding tissues, thus there is the possibility of non-union from the interposition of soft parts between the fragments, which cannot be foreseen, nor discovered prior to the occurrence of non-union.

Second. In fractures of the head and anatomical neck of the humerus there is great danger of non-union, or else union with some deformity and limitation of motion, as the result of excessive intra-articular callus formation, which, according to Roberts and Kelly, may lead to marked ossifying arthritis. There is, also, the mechanical difficulty of dealing with a proximal fragment and it has often been necessary in the past to perform excision of the head.

Third. "Lack of proper fixation" of fragments is given by practically all authorities as the prominent cause of non-union in fractures of the humerus it is equally true in fractures of the femur, and can also account for many cases of vicious union. I say that the extreme mechanical difficulty of maintaining fragments of these bones in proper retention by the various appliances advised for the closed method of treatment is responsible for "lack of fixation," and is a strong argument for the open method. Proper reduction cannot be effectively maintained by means of the usual appliances for the following reasons:

(a) In fractures of the upper end of the humerus a pad in the axilla and shoulder cap, combined with strapping arm to the side by means of a swarth is the usual means of fixation adopted. Every one knows the inefficiency of the shoulder cap and axillary pad as a means of immobilization. They do not overcome the action of the muscles tending to produce a deformity, and do not perfectly immobilize, hence, the tendency to recurring deformity. Roberts and Kelly say, "the value of the shoulder cap is not great as a fixation apparatus at any time, but protects the region from blows or falls, which otherwise might do harm."

(b) Splints cannot be applied to the humerus with sufficient tightness, especially if the fracture is in the middle or upper third, to maintain reduction with certainty, on account of the dangers of compression.

(c) Extension by means of weights from the elbow necessitate the sitting or standing posture, or if applied with the patient in a recumbent posture there is the difficulty of counter-extension, and is therefore uncertain, because it is not continuous, being interrupted by change of the patient's position and in adjustments in sleeping. Counter-extension in the axilla, if of sufficient force to be effective, is uncomfortable and likely to cause damage from too much pressure on the axillary structures. In the case of the femur our attempts at reduction are usually only partially successful (except in those favorable fractures which are transverse), and, if successful at the time of reduction, there is no positive assurance that the fragments will stay in proper apposition. Murphy says "this is because most fractures of the shaft are spiral or oblique and because the powerful muscles are in a state of spasm, and, although relieved by anesthesia at time of reduction, yet when the patient regains consciousness, the spasm is almost sure to again displace the frag-

ments, even though heavy extension is employed. Here again the extension is not continuous and uninterrupted since every movement of the patient's body or the sliding of the patient in bed defeats our efforts at immobilization. Plate 2 and 3 show case of non-union from ineffective immobilization with resulting pseudarthrosis.

Fourth. In fractures of the humerus and particularly of the middle third, the musculo-spiral nerve is liable to injury, because it lies on the bone in the musculo-spinal groove. If there is direct injury to the nerve at the time the fracture is received, the paralysis of the extensors is noticed at once, but if the nerve is stretched over one of the fragments, or caught between, its injury may be detected only after the splints are removed and be wrongly attributed to improper treatment or misapplied pressure. Injury of this nerve, if undetected, usually results disastrously to the patient, and can be detected and corrected if the open method is adopted.

Fifth. Fractures of the neck of the femur treated by the old method of extension, counter-extension and splints, almost invariably result in non-union. Murphy quotes the elder Gross as saying, in the last edition of his book, "that he did not believe he had ever had union of an intra-capsular fracture of the femur. He used Buck's extension, etc." The double abduction method of Whitman is the nearest approach of any closed method yet suggested to direct visual fixation. It is the method which should be used in those cases in which, on account of constitutional reasons, or extreme age, the operative method is contraindicated. All authorities agree that the results in treatment of this fracture are uniformly unsatisfactory, except perhaps in impacted cases. The mechanical conditions, the poor blood supply, and the difficulty of fixation are problems which make this a desperate condition and radical measures are more than justifiable. The influences adverse to union in this fracture are best overcome by use of autoplastic graft. Albee's method consists of "a strong autogenous bone peg accurately fitted into a hole drilled longitudinally through the neck of the femur with the fragments in good apposition." This operation is indicated in all ununited fractures of the neck of the femur; in most fresh unimpacted fractures in operable subjects under 50 years of age; and in all old fractures of the neck where malnutrition has resulted.

Sixth. Fractures of the lower end of the femur are fortunately rare, because they are grave both as to life and as to functional result. Supra-condular fractures are usually oblique or spiral and there is usually marked posterior displacement of the distal fragment due to the action of the gastrocnemius muscles, and the proximal fragment is pulled inward and forward by the abductors and the extensor muscles. In view of this displacement it is often found impossible to maintain the fragment in proper apposition by the old weight and pulley method with extension from the knee in flexion, even if we have under anesthesia been able to accomplish satisfactory reposition of fragments; there is still the fact to be remembered that with every movement of the body the muscles of the thigh are relieved from tension, and then contract, permitting a certain amount of mobility which is likely to result in vicious union. Another fact to be remembered is that we are not justified in attempting too much manipulation—especially pressure in the popliteal space, on account of the danger of injury to the popliteal vessels and nerves. For this reason I believe this fracture should be treated by the open method and an autoplastic inlay or intermedulary bone graft inserted. I have purposely omitted any reference to fractures in and around the elbow joint, since they are of such seriousness and importance that it would involve a greater discussion than could be attempted in a paper of this length.

The foregoing has been largely a discussion of the difficulties to be met, and our failure to overcome them by the closed

method. Now, what are the especial advantages of the operative or open method of treatment?

First. Direct ocular examination of the fragments and consequent detection of interposed structures, and accomplishing their removal.

Second. Visual reduction enables the surgeon to know that he has the proper reposition of the fragments.

Third. Direct fixation assures the surgeon that there will be no recurrence of deformity.

Fourth. The patient's chances for a good anatomical and functional result are greater, because of our ability to accomplish proper reduction and efficient internal fixation.

Fifth. There is more freedom from pain during the after treatment, because of a more perfect immobilization.

Sixth.' There is a decided shortening of the period of convalesence.

In spite of the above advantages which are evident and decided, there are contraindications to the operative method, chief among which are:

First. Lack of the proper facilities for faultless aseptic technic.

Second. Lack of experience of the surgeon in this kind of surgery.

Third. In the aged or in any one in whom for constitutional reasons any operative procedures are undesirable or dangerous.

Unless the surgeon has the necessary operative experience and good hospital facilities, it is better to trust the outcome to nature with some form of external fixation, since the patient will at least be spared the results of meddlesome surgery and possible sepsis. Having decided upon the operative method, one might be puzzled to choose from among the various methods of internal fixation that have been advised. It is not my intention to attempt to unravel this perplexing problem and review the long story of the efforts of the profession to find a suitable material for this purpose, but I wish to call attention to the disadvantages of the nonabsorbable material and try to show some of the advantages of the autoplastic graft for this work.

In the February number of *Surgery, Gynecology* and *Obstetrics,* Hogland, of Rush Medical College, sums up the situation correctly and in accord with Murphy, Albee and others, when he says: "In the remarkable development of bone surgery during the past few years, the most conspicuous feature is that the use of foreign material, such as steel plates, wire, nails, screws, etc., has been practically abandoned. Wherever possible every surgeon of experience now prefers to use autogenous or autoplastic methods, and this field is being rapidly developed. Intramedullary transplants, inlays, bone pegs and bone screws have a wide range of usefulness, and will be universally employed as soon as the profession has mastered the technic."

Also in a recent number of *Annals of Surgery,* Dr. W. Lathrop states that from his experience in several hundred cases during the last four years, and having used wire, plates, nails, bands and grafts, he finds the autogenous bone inlays of Albee to give by far the best results.

Practically all authorities agree and state that the less foreign material placed in a wound, the quicker it will get well—the reason being that the presence of a foreign body predisposes to infection, because, as Murphy states, "the tissues have not the response to infection." Groves, quoted by Albee, says "that sepsis is the result of an osteoporosis caused by the presence of screws, nails, plates, etc." Murphy has, also, noted this condition of osteoporosis, where screws had been inserted in the bone, in operating on cases of non-union, following the use of plates. The frequent necessity for removal of foreign material is also an objection to its use. There will be instances where the bone graft is not practical, and when that is the case, remember that the general principle with reference to the use

of any foreign material is the smaller the amount placed in the wound the better. Phosphobronze wire is the best of the non-absorbable ligatures, and will give the least trouble and has the advantage of great tensile strength, and can be tied like a string. I have on many occasions used phosphobronze wire, and have never had to remove it. When possible, and it is usually possible in fractures of the humerus and femur, the bone graft is the ideal internal fixation material. Albee says he gets "100 per cent union with perfect anatomical and functional results, with the use of this method."

All authorities agree that the bone graft is osteoconductive—that is, it plays the passive roll of a scaffold in which the Haversian canals in the dead bone (that is the graft) act as tubes into which the Haversian vessels from the living bone, above and below, pass. These Haversian vessels, from above and below, carry with them on their walls osteoblasts and osteoclasts, the osteoclasts dissolve the bone that was transplanted, and the osteoblasts make new bone to replace it.

Albee has, also, shown that the graft is osteogenetic as well as osteoconductive. In his case of sarcoma of the tibia mentioned in his "Bone Graft Surgery," in which it was necessary to resect two-thirds of the tibia which he replaced with two three-inch grafts, one inserted in the proximal and one in the distal end of the bone, and the two free ends of the graft contacted in the center, there was at the end of four weeks firm bony union between the free ends of the graft. "This callus could have originated from no other source than the two graft ends."

These two properties of the graft are very important, especially in old fractures with marked fixed deformity or cases of non-union, for in these cases there is always a distinct pathological change consisting of a condition of osteosclerosis. This accounts for the failure to get union after the use of metal appliances, because the sclerosed ends of the fragments are contracted, and the metal plate or wire can not conduct bone cells from the healthy bone above and below the sclerosed area. "This ebonated area may extend as much as one and one-half inches in each fragment, so much so that the bone fragments ideally contracted and perfectly immobilized by external splints, or internal metal devices, do not unite.

"It is clear that the surgical problem is the furnishing of an efficient internal splint, which is at the same time osteogenetic and osteoconductive, and which spans the sclerosed area with healthy vascular osteogenetic bone beyond the ebonated area." (Albee.)

The autoplastic bone graft, either as an inlay or an intramedullary graft fulfills all these requirements. It is osteogenetic and osteoconductive, while a plate or other metal appliance is an inhibitory influence to bone growth, and if the plate should be long enough to span the sclerosed area, it can not conduct living bone cells to the fractured ends. The presence of a plate more frequently causes osteoporosis, and the screws loosen up, and the plate becomes only a foreign body, which has to be removed, and non-union may even result. "A bone graft serves, also, as a perfect internal fixation splint, but it is even more, it is a strong stimulus to osteogenesis on the part of the host fragments themselves." (Albee.)

In this discussion, I have intended to bring to your attention what I thought were good and sufficient reasons, based on anatomical and mechanical grounds, why we could not expect better results in fractures of the humerus and the femur with the old so-called conservative method of treatment, and have tried to show that this is not a worked-out and exhausted subject, but is an interesting and fruitful field for research. The late Dr. John B. Murphy said a short time before his death, in speaking of bone work: "The advances in this field of surgery have been so rapid and numerous that no

surgical text-book has been able to keep abreast of them; in fact, there exists no text-book which adequately represents modern ideas on fractures and dislocations." The open treatment with the autoplastic graft, performed by one with experience and with the necessary surgical environment, offers us all an opportunity to practice more beneficial conservatism, because it protects the patient from the effects of anatomical and functional deformity.

INTESTINAL OBSTRUCTION; ITS DIAGNOSIS AND TREATMENT, WITH REPORT OF CASES.*

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It is not the intention of the writer of this paper to give you anything new or original on this subject, but to call your attention to some of the most cardinal symptoms, and to sound a warning note to take due notice of them, lest we go astray in making our diagnosis, thereby failing to institute the proper treatment at the right time.

First: Intestinal obstruction is divided into three general classifications, viz., adynamic, dynamic and mechanical, but before taking up the varieties let us recall some of the anatomical facts of the intestines.

The intestines are composed of an outer or peritoneal coat, a middle or muscular coat and an inner or mucous coat, which latter is thrown up into folds loosely attached to the muscularis, accommodating itself to the varying tones of the muscularis.

The gut, both large and small, is a potential tube some thirty feet in length, provided with nerves, arteries, veins and lymphatics. Potential, because sometimes its lumen is open containing gas, liquids, semi-solids and solid matter. At other times it is closed, and so tight may it be closed by the contractions of its own muscularis that it may resemble a hard fibrous cord.

The natural consequence of food taken into the mouth is a gradual descension from inlet to outlet, this forward motion is kept up by regular or irregular wave-like contractions of the muscular coat of the intestines assisted by gravity and the action of the abdominal walls and diaphragm. If the contents of the intestines fail to move forward from any cause and stasis occur in any part of the tube, symptoms of obstruction will develop.

This may be due to atonic paralysis of the muscular coat, interference of the nerve supply as in spinal cord lesions, spastic paralysis of the muscular coat, entirely obliterating the lumen of the gut, neoplasms or fecal impaction blocking the lumen, or may be by pressure of a tumor from the outside of the intestines.

In dealing with the varieties of ileus, we will only give passing notice to the first two, viz., adynamic and dynamic.

Adynamic, which means without power, is due to atonic paralysis of the muscular coat, and in consequence, characterized by an absence of peristalsis, may be caused by an operation on the mesentery, thereby cutting off the nerve or vascular supply, or both, local peritonitis and mediastinal lesions, involving the efferent nerve supply. Injuries to the vagus and sympathetic may also cause a paralysis of peristalsis.

Diaphragmatic pleurisy is another cause of adynamic ileus, and John B. Murphy said is one of the rocks on which many abdominal diagnosis are wrecked. Both the "Simon Pure" surgeon, who leaves internal diagnosis to "the other fellow," and the operating gynecologist meet here their just reward. Their first diagnosis is appendicitis, their second intestinal obstruction. Why? Because there is a paralysis of peristalsis, and if the pleurisy is on the right side, a tender point is found in the right lower abdomen and when the palpating hand is applied the abdomen is felt to be tense.

*Read before the forty-third annual meeting of the Florida Medical Association, at Arcadia, May 10-12, 1916.

Why? Because the abdominal muscles by contracting are trying to limit the excursion of the affected side of the diaphragm and ease the pain. Pleurisy, however, can be differentiated from ileus of the mechanical type by the presence of fever in the former and an absence of fever in the latter.

Of the next group of cases, the septic adynamic ileus, which for a long time was so difficult to differentiate, the most common variety is that due to local peritonitis. The patient, for instance, has primarily an acute appendicitis with perforation, or an infection from above, such as a perforation of a duodenal or gastric ulcer, or may be from a perforative cholecystitis. That patient develops at once a suspension of peristalsis and inability to secure a bowel movement; the temperature begins to rise and the leucocytosis to shoot up; vomiting with great prostration ensues; abdomen becomes tympanitic with a complete paralysis of peristalsis, you may give enemas or do what you may, but no bowel movement occurs until possibly an hour or so before death.

There is only one sure way to cure adynamic ileus resulting from general septic peritonitis and that is, to take out the appendix, drain the gall bladder, or give the gastric or duodenal ulcer the proper surgical treatment before the peritonitis has occurred. The man who has had to manage such a case needs no further argument for the early operation.

Dynamic ileus is found in lead colic and tyrotoxican poisoning, the latter of which causes the obstinate coprostasis with milk and occasionally with ice-cream poisoning.

The reports of the cases in the literature tell of the tonic contraction of the intestines into hard fibrous cords. This condition is often erroneously diagnosed and operated as a case of mechanical obstruction, as was done in one of my cases. If I had made the proper diagnosis and administered morphine, the chances are that this case would have been living today. This statement of giving morphine for a case of intestinal obstruction, for its radical cure, may sound orthodox, but the literature from the best authorities bear me out in this statement.

The mechanical obstructions are the group which we shall next consider, and the ones which it has been the misfortune of my colleagues and myself to deal with in a goodly number of cases, thereby prompting me to attempt to write this paper.

The conditions, which most frequently produce mechanical obstruction, are the external hernias, adhesions, diverticula, volvulus, intussusception and neoplasms. Of the external hernias, the inguinal is by all odds the most common. However, in the female the femoral hernia is more commonly the cause of obstruction. The umbilical and ventral hernias are very often the cause of obstruction. We all are familiar with the symptoms of strangulated hernias and also know the treatment, so I will not dwell longer on this condition.

Let us consider how the symptoms of the mechanical type of obstruction differ from adynamic and dynamic ileus. With the mechanical type there is always pain in the adult patient, recurrent and colicky in character, then nausea and vomiting, the vomiting increasing as the length of time from the onset increases, thus differing radically from the reflex type in adynamic and dynamic ileus, which diminishes as the length of time from the onset increases. Borborygmus is another useful sign. This sound is due to the explosions in the bowels in the effort of the peristaltic wave to overcome the obstruction. With mechanical obstruction, without infection, there is always borborygmus present and can very often be heard several feet from the patient. You can also see this peristaltic wave by exposing the abdomen. Sometimes the abdomen will ball up in ridges almost as large

as one's arm and move about over the entire abdomen.

Perhaps the point next in diagnostic importance after borborygmus is emesis. It is chiefly of the overflow type, the lower the obstruction the greater the quantity of overflow. In mechanical obstruction the violence of the vomiting always increases as time goes on, while in the non-mechanical type the vomiting, which is of a reflex action, constantly diminishes as time goes on.

Some conclusions may be drawn from the character of the material which the patient vomits. First, the vomitus is mucus and stomach contents, which later becomes mixed with bile, then the character of the vomitus becomes a little more offensive, and gradually more so, until you say it is fecal. However, John B. Murphy says that he has seen fecal vomiting but three times in his entire experience, extending over a period of a third of a century, and further says that fecal vomiting occurs only so shortly before death that it just misses becoming one of the post-mortem signs, and the doctor who waits for fecal vomiting to appear before making his diagnosis of intestinal obstruction will pass the undertaker on the patient's door-steps. However, the vomiting of a pea-soup-like material with a foul fecal-like odor is particularly significant of an obstruction.

To recapitulate, will say that with the "symptoms complex" of obstruction as obstipation, pain recurrent and colicky in character, vomiting with an increasing severity of a pea-soup consistency with a foul odor, borborygmus, violent reverse peristalsis, normal or subnormal temperature, we should rarely fail to make a diagnosis.

Without boring you further with a detailed description of this condition, all of which you can find in your text-books and much more explicit than I can possibly describe them, I shall now attempt to give you a report of the cases that we have had the misfortune to deal with. I say misfortune, because I think no man has or ever will build up a good surgical reputation by dealing with intestinal obstructions, as all our best authorities place the mortality rate from this condition at from thirty-three to eighty per cent. Yet I feel that we have been, on the other hand, fortunate in gaining considerable experience that we did not formerly possess.

Before reporting cases, allow me to express my gratitude to my colleagues in Arcadia for furnishing a goodly number of these cases, and allow them due credit for contributing to these reports, to all of whom I feel very grateful.

Case 1. J. C. R., male, age 35 years; printer. Previous history negative, except for past two or three months would have an occasional colicky cramp like pain in abdomen. Present illness began July 1, 1912. Patient became constipated, was unable to secure a bowel movement, had cramp-like pain in abdomen, which would recur every few minutes.

I was called on July 2, 1912, found patient with normal temperature and pulse, was anemic, and every few minutes would have cramp-like pain in abdomen; vomiting of the overflow type; upon examination found that during time of his pain abdomen would knot up into ridges almost as large as one's arm. After watching patient for a few minutes, and knowing that he had been a printer for a number of years, made diagnosis of lead colic. Did everything known to myself and all the authorities I could consult for lead colic, but patient grew progressively worse and on July 10, 1912, joined the great beyond.

Post-mortem examination revealed tumor in ileum the size of hen's egg about three or three and half inches above ilecocecal valve. Diagnosis of a malignant neoplasm and not lead colic as was supposed.

Case 2. Mrs. F. S., age 35 years. Entered hospital February 10, 1914. Family history negative. Present illness: had been constipated for several months, could get a bowel movement only by laxative and

enemas. On February 5, 1914, patient left the North for Punta Gorda where her husband had bought a farm. She did not have a bowel movement during her entire railroad trip extending over several days, but thought nothing of it until she reached home and began to take laxatives and enemas, and being unable to secure a bowel movement, or even to pass any gas, she became alarmed and came to see Dr. D. L. McSwain, who made a tentative diagnosis of intestinal obstruction. Patient entered hospital February 10, 1914, where she was watched for several days. We used laxatives and enemas, but could not secure a bowel movement, or even passage of any gas. Patient began to vomit with paroxysms of cramp-like pain in abdomen, and by inspection you could see her abdomen knot up into ridges and she would cry out with pain. Operation was decided upon and patient was operated on February 16, 1914. Upon opening the abdomen a tumor was found almost the size of your fist at the junction of sigmoid and splenic flexure of colon. Tumor was too low to do a short circuiting or side to side anastomosis, so we incised gut just above ileocecal valve. Made a side to side ileosigmoidostomy, leaving colon in situ. Appendix was examined and found normal and was not removed. Abdomen was closed with drainage. Patient did well until the seventh day, when she suddenly had a very severe pain in abdomen, and pulse began to shoot up, abdomen became tympanitic, vomiting recurring and things in general began to look bad, so we reopened abdomen and upon doing so found that the gas in the colon had become so great that it blew off the apex of the appendix and turned loose infective material into the general peritoneal cavity. At this time we opened the colon, evacuating its contents and inverted the raw edges and closed the abdomen with drainage. Patient made an uneventful recovery and left the hospital two weeks later, in apparent good shape, and remained so for about one year, when all the symptoms of obstruction recurred. Abdomen was again opened and we did a Mikulicz operation, which is to bring a loop of the colon with the tumor out of the abdominal incision suturing the parietal peritoneum around the loop and leaving it for a few days until it has cofferdammed, when we cut away tumor and gut leaving a double-barrel arrangement, to which afterwards we applied a heavy pair of forceps with one blade in each double-barrel arrangement, allowing them to remain until they cut themselves through. The fistulous opening in abdomen closed in due course of time and patient did well for several months, but tumor recurred from a metastasis and patient died June 26, 1916, from carcinoma of sigmoid.

Case 3. Mrs. J. McL., female, age 62 years. Admitted to hospital February 20, 1914, by Dr. R. L. Cline. Had been suffering from obstipation for several months. Few days before admission patient began vomiting and was unable to get a bowel movement by either a laxative or enema. After a few days, colicky pains appeared in abdomen, vomiting began, whereupon a diagnosis of intestinal obstruction was made, operation advised and performed February 24, 1914. Found tumor at junction of splenic and sigmoid flexure of colon filling almost the entire lumen of gut. We did a short circuiting or side to side anastomosis, leaving tumor in situ. Patient had an uneventful recovery and was in apparent good health until about February 1, 1915, when obstruction again recurred from a progressive growth of tumor. Patient was again admitted to hospital on February 7, 1915, and abdomen reopened, the tumor being so low down and we having taken up all the redundant bowel at previous operation we decided to do a Mikulicz operation, as before described in Case two. Fistula remained open for several months and patient did well until finally fistula closed up by granulation, whereupon patient immediately began having symptoms of intestinal obstruction. Patient had become so emaci-

ated that owing to her old age and weakened condition we thought it well to leave her alone. Patient died about July 19, 1915, from carcinoma of sigmoid.

Case 4. E. T., male (col.), age 35 years. Family history negative. Personal history: Patient had always enjoyed good health until about two years previous to present illness, when he began to suffer from constipation, which grew progressively worse, and for the past six months he could not secure a bowel movement unless he would either take an enema or laxative, and magnesium sulphate seemed to give him more relief than anything else, as it would liquify his feces and thereby give him a free evacuation. I first saw case on October 15, 1915, in consultation with Dr. D. L. McSwain; at this time patient was having abdominal pain, recurrent and colicky in character, vomiting, borborygmus, violent reverse peristalsis and subnormal temperature.

On rectal examination you could palpate a large mass high up in the rectum just above the superior border of prostate gland, with the "symptom complex" of obstruction. We decided on an operative procedure and patient was operated October 20, 1915. On opening abdomen we found a tumor mass about three inches in diameter at junction of sigmoid and rectum filling almost the entire lumen of the gut; this tumor was evidently either an adenofibroma or adenosarcoma, but with our means at hand we were unable to say which.

We did a side to side anastamosis, joining lower end of sigmoid to rectum, leaving the tumor in situ, and closed abdomen without drainage. Patient made an uneventful recovery, leaving the hospital in two weeks, and has remained well ever since and today is doing very hard work running a dray for a hardware and furniture establishment.

Case 5. L. J. B., male, age 45 years. Family history negative. Personal history: About ten years previous patient had some abdominal operation but does not remember of what nature. Present illness began July 14, 1914. Patient was taken with severe diarrhea which lasted for two or three weeks. Was in hospital ten days, having frequent stools of mucus and blood. Had an apparent recovery and remained well until November 10, 1914, when he reentered the hospital with another attack of diarrhea. This lasted for a week or ten days, when diarrhea ceased, vomiting with cramp-like pains in abdomen occurred. Was unable to retain anything. We were unable to secure a bowel movement from any means. Operation was decided upon. Patient was operated on November 10, 1914. On opening abdomen we found a loop of ilium had become adherent posterior to the wall of bladder and had ulcerated into its cavity producing a complete obstruction. This loop on traction was easily pulled through which left an opening in posterior fundus of bladder about an inch in diameter and looked as though you had taken a punch and made this opening, so smooth were its walls. Opening in bladder was closed by Lambert sutures. Abdomen was closed with drainage. Patient did well for about one week when he became suddenly worse and died in forty-eight hours.

I was away at the time of his death, therefore did not get a post-mortem and am unable to explain cause of death, but from all reports think he must have died of acidosis.

Case 6. Baby B., male, age 2 years. Was referred to hospital by Dr. R. L. Cline, July 14, 1914. Family and personal history negative, until twenty-four hours previous when he came into the house from his play, complaining to his mother of pain in his abdomen. Soon began vomiting, which grew worse all afternoon and night. Next morning when I saw patient he was in a state of apparent collapse, abnormal temperature, rapid pulse, also rapid breathing. Diagnosis of intussusception had already been made by Dr. Cline. Abdomen was opened and we immediately found a well-

developed case of intussusception, which we soon corrected and closed the abdomen. Made a favorable prognosis, but patient did not do well and died twenty-four hours later from what we had supposed to be a recurrence of the intussusception, but postmortem did not reveal a recurrence as we had supposed. Patient must have died from shock.

Case 7. S. I. S., male, age 62 years. Family and past history negative. Present illness began about January 1, 1915, when patient became unable to retain any food. Soon after bowels became constipated and could get only a slight movement by laxative and enemas. Patient entered hospital February 16, 1915, very much emaciated. Could not retain any solid food on stomach but was able to take small amount of liquid, which he would retain unless he would take a little too much when he would vomit. Soon developed cramp-like pains in upper abdomen, especially after taking food. Patient was watched for several days. Tentative diagnosis of either duodenal or gastric ulcer was made. Abdomen was opened on February 20, 1915, found carcinoma of pylorus and a posterior gastrojejunostomy was done. Patient made an uneventful recovery and left the hospital alone, for his home at Sarasota, two weeks later, in apparent good shape.

I did not hear from the patient until about six months ago, more than a year after operation, when he called on me at my office and was still in apparent good shape, except in the right epigastrum you could feel a tumor the size of your fist, which he said gave him an occasional pain. I told him that I felt I could do nothing more for him and that he should get ready to pass to the great beyond before many months.

Case 8. Baby D., male, age 2 years. Was brought into my office on morning of May 8, 1916. Was in a semi-comotose condition. Temperature abnormal, pulse very weak and breathing rapid and shallow, cold clammy perspiration. Patient was well and hearty up to twenty-four hours before I saw him when, his mother says, he came into the house from his play complaining of pain in his abdomen. Patient soon began to vomit. Parents gave oil and enemas trying to secure a bowel movement but failed. Patient was restless that night, and next morning was brought into my office from his home twenty miles away, with picture as above stated. I made a tentative diagnosis of intussusception and advised immediate operation which was consented to. Patient was immediately carried to hospital and abdomen opened under ether narcosis and strict search made for the obstruction but none was found; but the intestinal tract, both large and small, was in a state of spastic paralysis, the muscularis of the entire gut being contracted into a hard fibrous cord. Patient of course was not relieved and died twenty-four hours after operation. Had I made correct diagnosis and given dose of morphine, patient might have recovered.

INTESTINAL OBSTRUCTION FROM GALLSTONE—REPORT OF A CASE.*

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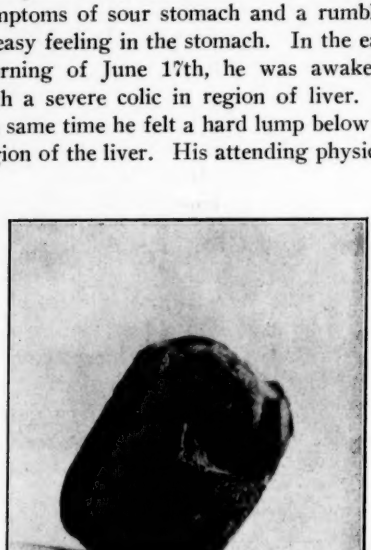
A male patient, age 68, when first seen on October 19, 1916, stated that he was taken the evening before with colic and vomiting and that these symptoms had continued during the night and forenoon of the day. As he was still vomiting food taken the day before, I made a tentative diagnosis of food impaction in upper part of small intestines not far below the duodenum.

Going more fully into his personal history when I saw him next day, I found that excepting three attacks of malaria, the patient had been in good health until 1899, when he had an attack of colic and vomiting of one day's duration; diagnosed "bilious colic." From this time until about June 1, 1916, a period of seventeen years, patient's

*Read before the Polk County Medical Society, December, 1916.

health was good. On this day he began to feel sluggish and sleepy, and noticed that his skin was slightly yellow, but states that it was not the deep yellow tint of jaundice. This condition continued about the same until June 15th, when he had the additional symptoms of sour stomach and a rumbling uneasy feeling in the stomach. In the early morning of June 17th, he was awakened with a severe colic in region of liver. At the same time he felt a hard lump below the region of the liver. His attending physician



made a diagnosis of gallstones. This attack of colic kept up for about eighteen hours and he was bedfast for four weeks following, but during these four weeks had no return of the colic. During this illness the lump remained below the liver, but instead of having symptoms of intestinal obstruction he had a diarrhœa.

He gradually recovered, soon regained his normal weight and remained well until on the evening of October 18th, the beginning of the present illness. With this history before me and finding the hard, freely movable tumor, I made a diagnosis of obturation ileus either from gallstone or carcinoma. As patient had regained weight after an attack in June it was safe to make a diagnosis of gallstone impaction.

At operation done on June 20th, about thirty-six hours after onset of attack, I found a large gallstone completely obstructing the ileum. Stone is 3½ inches in circumference and 1½ inches long. Patient made an uneventful recovery, leaving the hospital on eighth day.

Obstruction of bowels from gallstone is comparatively rare, as one large hospital reports only one case in nineteen years; another only one in fifteen years; Johns Hopkins reports one from this cause in 280 cases of obstruction of bowels.

Preoperative diagnosis is seldom made. It is based upon signs and symptoms of obturation ileus. Systematic use of X-ray may prevent mistake and help to make an early diagnosis.

Operative mortality is high. One series gives an operative mortality of 69 per cent; another a mortality of over 50 per cent. Delay in diagnosis and operation is the chief cause of high mortality.

AN ADDRESS

On Surgery, particularly considered as a future for young men and women, delivered before the High Schools of Tampa.

JOHN S. HELMS, A.B., M.D., F.A.C.S.,
Tampa, Fla.

The honor of being called upon to address you upon this subject is only equalled by the responsibility of its acceptance. It is indeed a privilege of which I am most proud. It elevates me at least for the time being to the exalted position of a teacher. Teaching is, next to medicine and surgery, man's most noble calling. Permit me, therefore, to congratulate the teachers upon their choice of a vocation. God in His omniscience, when He created man, placed within His soul, mind and conscience, one burning,

never-ending desire, that of creating something. This desire stands out preeminently above all things else. Fatherhood and motherhood are centers around which revolve all human activities.

Teaching is creative in its work. It is the art and science of building human character, men and women, from the embryonic materials furnished by parenthood. Its position is exalted and its responsibilities are beyond measure. The mental, physical and moral welfare of the individual and the security of the nation, depend upon the education of our people. Our fitness for any human activity is measured directly by our educational preparedness. Preparedness seems to be the slogan of the hour, and perhaps justly so. The most efficient preparedness must, however, come about through education — constructive and not destructive. We need a practical education that will help us do things and not dream them.

This is a day of maximum efficiency and special fitness for the special occupations of life. The young man or the young woman, and even the child, can not choose too early their life occupation, and their early education should be directed towards fitting them for their chosen calling. Education should be general enough to give each a broad view, an acquaintance and sympathetic touch with all occupations, but especially directed towards one. The study of Greek and Latin should be confined largely to those whose occupations involve the study of the sciences, and only enough should be acquired to properly comprehend them.

The science of surgery requires long and painstaking study, the fundamental basis of which should be laid in the High School. The study of physics, chemistry, biology, hygiene, sanitation, physiology, and anatomy lays the first and most important firm foundation for the study of medicine and surgery for those who choose either for life's work. These studies are very important even to those who do not expect to study medicine and surgery, for it affords a thorough basic knowledge for right conduct to preserve life and health and give the power to judge correctly those who assume to practice medicine and surgery, and thus enables you to intelligently choose your physician and surgeon, which is important in this day of imposters and multiplicity of 'isms and 'pathies. This knowledge also enables you to better understand the explanations of your physician and surgeon's diagnosis and treatment in case of sickness, and therefore secure a more intelligent cooperation for cure. It teaches you to intelligently avoid the ignorant and dishonest, also to avoid the use of injurious patent medicines and nostrums, adulterated foods, and alcohol. Furthermore, this knowledge compels you to be better citizens in that you will be able to select for our law-making bodies men who will enact proper laws for the protection of the people against the impositions of the incompetent in medicine and surgery, and the ravages of patent medicines, alcoholics, and adulterated foods.

Surgery may be defined as the science and art of curing diseases and injuries and correcting deformities through mechanical means. The science is a study of the theory of the principles of surgery and is paramount. The art of surgery is simply the execution of the procedures indicated by the proper application of the science of surgery in the given case. A popular conception of a surgeon is a reckless, dare-devil individual who has what is commonly called the "nerve to cut." There was never a more erroneous conception of the proper fitness for anything than this is of the proper fitness for a surgeon. On the contrary, the surgeon should be deft of finger, absolutely devoid of recklessness, careful, gentle, sympathetic and painstaking, and a thoroughly scientific individual.

Time will only permit me to recite to you a few of the brilliant achievements of surgery. There is scarcely a part of the human body that is not invaded by the surgeon at some time. Even the heart and the brain, two of the most vital organs, have

been and are successfully operated upon. Diseases which were formerly considered to be medical diseases, and practically incurable, are now cured by surgery. This is particularly true of the diseases of the digestive system, or the gastro-intestinal tract. The now well-known and quite common disease, appendicitis, which was a few years ago little understood and less amenable to treatment, has been robbed of its dangers by the intelligent application of surgical treatment. Many forms of chronic indigestion, whose causes were unknown formerly and which did not yield to treatment with medicine, are now known to be due to chronic infections of the gall bladder, with or without stones, and are now safely and successfully treated by surgery. Diseases of the stomach itself, including ulcer and cancer, are being successfully treated by surgical means. We do not hesitate, if necessary, to remove the greater part of the stomach.

Many diseases of the nervous system are being cured by surgery. Surgical diseases of the nervous system are so numerous and so common that there are men who do no other kind of work except this branch. Brain abscesses, brain tumors, epilepsy, and many forms of neuralgia, as well as injuries to the nervous system are prominent among the diseases amenable to surgical treatment. All of you can recall examples of the efficiency of surgery in the treatment of fractures and diseases of the bones. We do not hesitate to transplant parts of bones and even joints, with brilliant results.

Our means of diagnosis of surgical diseases have wonderfully advanced in the last decade or more, among the most notable may be mentioned the X-ray. The proper application of the X-ray serves as a valuable aid in most surgical diseases of the human body.

This little glimpse into the achievements of surgery may suggest to the mind of some of you the attractiveness of surgery as a profession. This leads naturally to two questions, viz.: First, what is involved in the fitness of a successful surgeon? Second, what are his rewards? Fitness may be divided into two classes, natural and acquired.

The first and most important requirement is a natural endowment, with a heart, mind and conscience filled with the most altruistic principles. The humanitarian spirit must be well developed. A deep human sympathy must be a natural endowment. A high sense of responsibility and conscientious duty, joined with industry and a pleasing personality, constitute the natural fitness for the successful practice of surgery.

The acquired fitness may be summed up as follows: A thorough preliminary education as is required by the A. B. degree in the average state university before entering upon the study of medicine and surgery. The M. D. degree secured in a college recognized as A-plus by the Association of American Medical Colleges, with at least a four-years course requirement. After the M. D. degree is secured two years should be spent gathering clinical experience in a well-regulated hospital recognized by the American Hospital Association and approved by the Association of American Medical Colleges, then five years should be spent as assistant to some recognized successful surgeon. After these requirements are fulfilled the young man or young woman may be said to be ready to engage in the practice of surgery in one or more of its branches. I say young woman advisedly, for there are women who are successful in different departments of surgical work. In fact, all the allied branches of surgery offer splendid opportunities for women. For some of them they seem particularly adapted by nature. Women make very efficient anesthetists, surgical assistants, and pathologists, as well as the most ideal surgical nurses, and there are no more useful or dignified occupations than these for women.

The profession of surgery being largely humanitation, necessarily, the financial rewards are small. There are a few whose achievements are so great that their reputa-

tions spread far and wide, but one rarely meets the wealthy surgeon who has made his fortune by his profession, and scarcely none die rich.

Considering the amount of work done, time consumed, and money spent in the proper preparation to become a real surgeon, I consider the financial rewards less commensurate than most other callings. Fortunately, there are other rewards greater than financial that come to the true surgeon, who has the proper humanitarian spirit. Surgery is founded upon scientific facts capable of proof to the intelligent and sufficiently educated mind, and is therefore a legitimate profession. The consciousness of being engaged in a legitimate calling is a reward. To be held in high esteem by the individual and the public at large as a benefactor is a reward. To be able to remove the ills of mankind and thereby relieve human suffering and misery is a reward. To have the power and knowledge to teach one's fellow man health and happiness is a reward, and last but not least, to be able to bring cheer and soothe the brows of those beyond the power of the human surgeon and point out to them the Great Surgeon beyond is a reward.

SENILITY.

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Senility is commonly likened to second childhood, but not only is their anatomy different but their mental and physical functions as well. Irritability is marked in childhood but decreased in old age, the sense perceptions being much less active in those of advanced years. Slight disturbance in childhood will cause a pronounced rise in temperature, while a profound impression is needed to cause a like rise in the aged. The heart and respiratory centers are easily disturbed. Functional capacity of all kinds is much reduced. Acts now require a sensible effort which were formerly done unconsciously. The male of advancing years acquires a higher voice and a broader pelvis, approaching in type that of the female. The female commonly acquires a lower voice and a growth of hair upon the face. Insufficient repair is found especially in the higher order of tissues such as brain, marrow, spleen and muscle, all of which require a plentiful blood supply, while the lower order such as fat and hair may have an increased growth. Intestinal decomposition products are increased while the urea and uric acid eliminated is much reduced. As a pulse of 120 is normal in infancy so are the degenerations, hypertrophies, etc., of old age. The brittle bone of the aged is as natural as the elastic bone of childhood. The dependent child arouses sympathy while the disagreeable facial aspect, limited usefulness and self-centered mind of old age destroys sympathy or gives rise to a feeling of irritability.

Growing infirmities and the more frequent thought of the little time of life remaining cause the selfishness of old age as well as the stubborness and perversity so commonly found. Mentally, recent impressions fade quickly while the interest in daily events is lessened. Owing to the impaired circulation and lessened oxidation of blood, cyanotic lips, pale ears and passive hyperemia over the malars and tip of nose is commonly seen. The waste of muscles is determined by their activity, their fatty degeneration being delayed in those that have received the most use. Because of the combined mental and physical deterioration, one who may have formerly been quite neat in appearance may become slovenly or dirty in appearance. Some difference in these changes occur in men and women, the latter being influenced by the menopause, while their greater pride or vanity leads them to make a greater effort at good appearance than men. Their religious tendencies often make them more resigned to the inevitable and thus more cheerful, this, with sex, bringing them a greater degree of sympathy than is given the old man. While great changes occur in

bones, cartilages and muscles, the greatest is in the circulatory system. Hypertrophy of the heart is much influenced by the arterial conditions. These first show a hyperplasia of the connective tissue of the intima which produces stiffening of the vessel, thickening of the inner coat and lessening of its caliber, nutrition of the vessel becomes disturbed, the inner coat becomes soft, fatty and atheromatous foci develop, muscle fibers waste, calcification is progressive and may reach a point where the pulse can not be felt. The lessened lumen may proceed to complete obliteration and produce gangrene. The heart must hypertrophy to force the blood through the contracted inexpansible blood-vessels, and an aortic insufficiency is the rule in old age. The endocardium undergoes similar changes to the intima of the arteries. The veins lose muscle and elastic fibers and are subject to overfilling and dilatation.

Lung atrophy is progressive, the septa between the alveoli waste and the air vesicles coalesce, producing senile emphysema. When this change is advanced, the upper lobe of the left lung sinks forward over the lower lobe while the middle lobe of the right lung sinks forward over the lower lobe. The loss of respiratory capacity is about 1 per cent per annum after sixty years. In the digestive tract the teeth are lost, lower alveolar processes waste, salivary glands atrophy and their secretions diminish. The stomach dilates through atony and waste of muscle fiber. Glandular atrophy produces a lessened amount of hydrochloric acid. Muscular change in the large intestine favors its dilation, which is most marked about the sigmoid flexure. Because of impaired circulation hemorrhoids are common. There is increase of connective tissue with hardening and contraction of the liver. If there be weakened heart action it will become engorged. The kidneys undergo sclerotic and atrophic changes similar to those found in interstitial nephritis. There is a progressive increase of connective tissue between the apex of the pyramids from youth to old age which is the only histological evidence of aging not found as a pathological condition. The glomeruli, loops and tubules atrophy and connective tissue bands compress the parenchyma. Connective tissue bands in the bladder walls produce constriction with pockets between them. The sphincters atrophy, permitting dribbling. In one-third of the senile cases there is irregular muscular hypertrophy of the prostate which is most common in the middle lobe. Atrophy of the testicle occurs as in other organs and the number of spermatozoa is decreased, but not their activity or functional powers. The brain changes are atrophic and degenerative which is mainly confined to the cerebral cortex and is most marked in the left hemisphere. Atheromatous changes are more marked in the vessels of the brain than in any other organ. Functional change in the various organs usually terminates life before there has been much change in the nerves, except those of special sense.

FACTORS INFLUENCING THE DEATH RATE IN SURGICAL AND MEDICAL APPENDICITIS.

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Lakeland, Fla.

I do not expect to present anything new on this subject, but desire to repeat and emphasize a few facts that mean life or death to the patient.

From experience, I feel certain some general practitioners do not recognize the gravity of certain lines of treatment and their responsibility in handling these cases. Some few physicians do not recognize the benefits of surgery soon enough and others fail to recognize the gravity of the danger period in appendicitis. Every physician should know the classic symptoms of Murphy (1): *"Pain, nausea and vomiting, local sensitiveness, elevation of temperature,* and *an increase in the number of leucocytes."* He states "nausea and vomiting never precede pain in appendicitis; that tem-

perature never precedes pain in appendicitis."

Cathartics and food in acute appendicitis are as dangerous as dynamite. Early operation for appendicitis while the infection is confined to the appendix is comparatively safe, i. e., the first twelve to twenty-four hours and every twelve hours thereafter increases the risk.

The great danger period for surgery is after the second day, possibly the third in some cases, until the acute infection subsides. Until the general practitioner recognizes and acts on these cardinal principles, the death rate in appendicitis will be high. So long as the death rate is unnecessarily high, some one is responsible and that one in most cases is the physician who has charge of the case first, unless the patient refuses to accept advice.

How shall that death rate be lowered or prevented?

First—Advise operation in all interval cases where the patient has had more than one attack, where there is evidence of chronic appendicitis, and in all cases where tenderness over the appendix remains after an acute attack.

Second—Advise operation in all acute attacks while infection is confined to the appendix if a competent surgeon can be had.

Third—Immediate operation in all fulminating cases and cases of rupture with free extravasation into peritoneal cavity.

Fourth—Proper care and treatment of all cases that refuse early operation or those that have passed into the danger period.

Fifth—In the danger period operation is imperatively demanded for rupture and free extravasation also necessary in abscess formation.

The death rate in surgery of the appendix depends on when and how the operation is done, and the condition of the patient at the time.

The death rate in cases treated medically depends on the amount of cathartics, the time given and the amount of food given, and also other medication and care. The death rate in interval operations should not exceed one-fifth to one-half of one per cent, and in early operations should not exceed one per cent unless extending into the danger period.

Murphy states (3): "The average hospital mortality of hospitals that publish reports is just a little over 10 per cent." He considers there is no palliative excuse for a 10 per cent mortality in appendicitis. In the best hospitals 98 per cent of all cases are saved. Murphy also states (4): "The mortality rate of appendicitis in children is three to four times as high as in adults."

From complications and condition of the patient it is inevitable that operations in the danger period will always be high in the hands of the average operator, yet free drainage, proctoclysis and the Fowler position have reversed the death rate in severe cases.

Early operations in acute appendicitis are curative and preventive. Curative in that the diseased appendix is removed while the infection is yet confined to the appendix, preventive in that the danger period is eliminated and no danger of subsequent attacks.

Operation during the danger period is much more dangerous and should usually be a life-saving measure or for an abscess.

As a rule it is best and safest to carry a patient through the danger period and later when in good condition do an interval operation.

An interval operation is safest and other surgical work can be done at the same time, thus avoiding multiple operations.

In early operations there is too much risk of spreading infection to do other work at the same time.

Operations in danger period depend on complications and condition of the patient. If there is rupture and free extravasation into the peritoneal cavity, then a minimum of anæsthetic, rapid opening of abdomen, quick removal of appendix and free drainage followed with proctoclysis and Fowler

position are essential to success. If it is the handling of an abscess, the condition of patient and condition in abdomen will decide whether it is best to simply drain or do more complete work. If the vitality of the patient will permit and the search is not too prolonged and too many adhesions late in the danger period, then the appendix should be removed.

Murphy (5) operating on a case of abscess eighteen days after onset of symptoms states: "We do not tear up adhesions; we do not spread pus into other areas of the abdomen. It is an entirely different situation when an appendix case comes to us on the second, third or fourth day. There we have adhesions of the inorganic type—natural agglutinations; while on the eighteenth day we have organic adhesions. When we separate the agglutinations, we separate two non-absorbing surfaces. The lymph-spaces are coffer-dammed, and there is not the slightest danger of absorption from their surfaces. When we separate organic adhesions, then we tear up vascular areas—we produce a fresh vaccination zone, and we have all the dangers of infection which we would have if the patient had had no previous inflammatory condition."

Crile (6) says: "If appendix be not found readily, then its removal should be left for a second operation, after the abscess has completely healed. In other words, the protective wall of granulation must not be broken through, for a breach in this protective structure may mean spreading peritonitis, new abscesses, pylephlebitis and subphrenic abscess."

E. H. Haylor, Dublin (7): "Abscesses opened and drained only 15 per cent of cases recur and require second operation." He removes the appendix unless it requires manipulation that endangers life."

Moynihan (8) uses split rubber tubes for drainage, has no liking for gauze unprotected, as a drain in any part of the abdomen.

In abscess (9), if a prolonged search is required and adhesions have to be freely separated, he does not remove the appendix and has only 2 per cent recurrences. "The correct proportion of recurrences is probably 10 per cent."

The kind and quantity as well as the placing of drainage in these cases are very important factors. Soft rubber drainage tubes split, no fenestra and rubber tissue are best, if gauze is used, it must be inside the tubes or protected with rubber tissue. Never leave gauze in contact with intestines unless you want a fecal fistula to follow. The drainage must be carried to the bottom of the abscess into the pelvis and at times retrocecal so as to give free exit to pus.

Murphy claims (10): "The relief of pus tension is the first surgical step toward retarding absorption in all acute infections."

Crile (11) simply drains in these cases.

Irrigation is dangerous as it spreads infection, traumatises and washes off protective coating, carries infection up to the diaphragm and greatly increases absorption. Murphy (12) condemns irrigation also in all cases of infection with perforation.

The incision is a factor of importance in many cases. If one is certain the operation is one of simple appendectomy, the muscle-splitting incision will answer. If other work is to be done or complications met the incision at the border of the right rectus is best, as it can be enlarged to meet the demands in correcting adhesions, Lane kink, Jackson's membrane, retrodeviated uterus, diseased tubes or ovaries, or in handling gall-bladder work, ulcer of duodenum or of the stomach, etc.

This incision is safer and more practical in operations during the danger period.

We now come to the medical treatment as a factor in the death rate.

So long as some patients refuse to be operated upon in the first two or three days just so long will there be cases for medical treatment and that treatment should not kill if it does not benefit.

Cathartics are most dangerous and condemned by most surgeons.

Ochsner (13) writes: "The giving of cathartics of any kind during an acute gangrenous or perforative appendicitis at any time during the attack has undoubtedly destroyed more lives than surgery has saved in this disease."

DuBose (14) quotes Moynihan as saying "purgation spells perforation." Deaver as saying "the purgative is more deadly than the scalpel. In Deaver's statistics of one year's work, of those purged only 1.5 per cent escaped perforation, gangrene, or periappendicular abscess, and those to whom purgatives were given 97.5 per cent had the most severe types of appendiceal disease."

Ochsner (15) states: "In our personal experience no case of acute appendicitis has died in which absolutely no food of any kind and no cathartics were given by the mouth from the beginning of the attack."

Mumford (16), referring to the use of opium and ice on the one hand, and saline purges and poultices on the other, states: "Happily such treatment is now relegated by the best practice to the limbo of contemptuous oblivion."

In acute appendicitis nature checks peristalsis, locks the ileocecal valve, preventing passage of gas and feces, the abdominal muscles become rigid, the omentum drops down around parts to protect and help wall off, all working together tend to fix, protect and wall off the appendix.

Cathartics destroy these life-saving measures instituted by nature. Food does the same thing by starting up peristalsis, adds to nausea and vomiting, also to toxic material in alimentary canal and helps to kill the patient. The only time a cathartic is possibly indicated in acute appendicitis is when the attack comes on soon after a hearty meal of undigestible food and then olive oil or castor oil is safest, followed with a small enema. It is safer even then to wash out the stomach if a stomach tube can be had without too long delay. Every physician should know the details of the Ochsner treatment for appendicitis and use it in all cases that cannot or will not be operated upon. It is of special value in preventing complications during the danger period. I wish to repeat and emphasize that cathartics and food are as dangerous as dynamite in acute appendicitis.

Do not feed, do not give cathartics, wash out the stomach if vomiting, empty rectum with small enema, use proctoclysis in small amounts slowly to which should be added predigested foods, use ice cap to side, keep patient in the recumbent position in mild cases, in severe cases in semi-recumbent position, then you will have but few complications in the danger period and have but little use for morphia.

Occasionally one or two small doses of morphia may have to be given until you get the patient under control, but remember sudden cessation of pain in acute cases is a very dangerous symptom. If large doses of morphine have been given, you cannot recognize this danger signal of perforation until constitutional symptoms and general peritonitis begins, thus losing valuable time. Deiulafoy calls this "The Treacherous Calm."

I know Crile (17), in accord with his kinetic theory, advises giving morphia, but he also advises immediate operation, urging the Fowler position before, during and after operation until the abdominal infection is safely over. After operation this danger signal is not needed.

I do not know of anything more certain to kill your cases of acute appendicitis than cathartics and food, then morphine to lull the fire you have kindled and cannot quench, the majority with such treatment kept up will soon sleep the sleep that knows no waking "beneath the green curtain that never outward flows."

Why should it be thought a thing incredible that disinfectants given by mouth might influence or modify the course of appendicitis? Time forbids a full discussion of this

phase of the subject. It is not alone the local condition in many of these cases that produce the serious symptoms, but we have a secondary factor in the absorption of very toxic material from the stomach and intestines. Washing out the stomach gets rid of much of this toxic material, but not all of it, and in milder cases the stomach is not washed out, so in both instances the use of disinfectants help mitigate the toxic absorption.

Salol — salicylate bismuth — carbonate guaiacol, aa gr. iii, given every 2 to 4 hours for the intestines.

Carbolic acid gtt. i—Listerin—Pepsenica, aa 5ss, for the stomach every 2 to 4 hours.

One or both may be given with a small amount of water, alternating if both are given. These are not specifics for appendicitis, but help nature to overcome the burden she is carrying and aid in the establishment of immunity.

In conclusion I give a brief summary of the value of leucocytosis and differential blood count as an aid to diagnosis and as a danger signal:

Tyson (18), referring to appendicitis, states: "Leucocytosis is present in a large number of cases. It is an important diagnostic sign."

Bovaird (19): "A definite leucocytosis is definitely present and an increase of polynuclears usually associated."

Todd (20): "Leucocytosis depends on two factors; the severity of the infection and resistance of the individual. Leucocytosis may be absent altogether when the infection is extremely mild, or when it is so severe as to overwhelm the organism before it can react. When the leucocytosis is marked, a sudden fall in the count may be the first warning of a fatal issue. A marked leucocytosis (20,000 or more) nearly always means abscess, peritonitis or gangrene even though the clinical signs be slight."

Brooks (21): "The presence of more than 80 per cent of polymorphonuclears is indicative of purulent or inflammatory processes and the reliability of this condition is enhanced with the rise in percentage." He quotes Sonnenberg as saying "Leucocytosis explains the degree and virulence of the infection and the toxicity of an inflammation, and its further course reveals their increase or decrease. Occurrence of new foci and suppurations is revealed earliest by reincrease of the number of leucocytes and frequently these can be discovered in this way, even when the pulse and temperature are unaltered."

Stitt (22): "The leucocyte count is of great value in septic processes, especially when we obtain a leucocytosis of 80 to 90 per cent of polymorphonuclears. It is in connection with the question of operation in appendicitis or similar conditions that the matter of a leucocyte count is of prime importance. If there be a leucocytosis but with less than 75 per cent of polymorphonuclears, it indicates an infection of little virulence or a walled-off process with an exacerbation. It is difficult to form an opinion when the polymorphonuclears are under 80 per cent. Leucocytosis with a polymorphonuclear percentage of 85 to 90 indicates immediate operation; percentages over 90 point to peritonitis and if with such percentage of polymorphonuclears there is absence of leucocytosis, the prognosis is grave."

Eisendrath (23): "Catarrhal appendicitis is accompanied by a mild degree of leucocytosis, rarely above 12,000. An increasing leucocytosis, from 15,000 upward, generally indicates a severe infection. In some severe cases of catarrhal appendicitis one may find a count of 25,000 to 30,000. If the count remains stationary, it is indicative of a walling-off. If the leucocyte count decreases gradually in a mild attack, it indicates improvement. If it decreases suddenly after a severe attack, it signifies either gangrene, perforation with beginning peritonitis or the rupture of an abscess into the general peritoneal cavity. The majority of cases in which perforation or gangrene occurs early,

and causes peritonitis, we have a low leucocyte count, owing to the lack of resistance on the part of the organism and the overwhelming of the system by the toxines."

Murphy (24): "In early cases not so valuable as most cases are operated upon. In cases between the fourth and fourteenth days the line is very valuable as an indication of the patient's poor resistance and necessity for immediate operation. Operative findings in such cases bear out the leucocyte determination with wonderful accuracy. In cases like those just mentioned, a horizontal or falling line indicates the patient is taking care of the infection. If the latter is severe, as shown by a high though falling line, the patient may perhaps be given medical rather than surgical treatment. When such a case is kept under observation, the line should be determined each day; and should it start to rise, the patient may be subjected to operation.

Bottomly (25): "An increase in the relative number of polynuclear cells is an indication of the severity of the toxic absorption and the degree of leucocytosis is an evidence of the body resistance toward the infection. In other words, the polynuclear percentage is an index of infection; the total leucocytosis is an index of body reaction; their proportionate relationship is an index of resistance.

Thomas and Ivy (26): "It has been found that streptococci and pneumonococci are killed only by the blood plasma, i. e., by the leucocytic substances, these organisms multiply in serum alone. On the other hand, typhoid bacilli are destroyed by serum or humoral bacteriocidins. In this way is explained the clinical fact that in streptococcic and allied infections there is a marked leucocytosis, while in typhoid fever the leucocyte count remains normal."

To briefly condense we have:

1. An increasing leucocytosis with increasing polymorphonuclears indicates inflammation or infection.

2. An increasing leucocytosis with a corresponding increase in polymorphonuclears means an increasing infection and that nature is reinforcing to combat the same.

3. An increasing polymorphonuclear percentage indicates an increasing toxic absorption and the higher above 80 per cent the more danger to life of patient and especially so if the leucocytosis is receding or very low in proportion.

4. A stationary leucocytosis and polymorphonuclear count indicates a walled-off process, both gradually receding indicates improvement, a sudden dropping means extreme danger to patient.

5. A rapidly increasing leucocytosis with a corresponding increase of polymorphonuclears means a rapidly increasing infection and if continued indicates operation or serious result to patient.

6. After both are on a standstill or gradually subsiding, then a sudden reincrease indicates a new foci of suppuration or extension of original infection.

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The Journal of the Florida Medical Association

Owned and published by the Florida Medical Association.

Published monthly at St. Augustine and Jacksonville. Price, $1.00 per year; 15 cents per single number.

Contributions for publication in this journal, whether scientific papers or reports of County Secretaries, should be typewritten.

Address Journal of the Florida Medical Association, St. Augustine, Florida, or 334 St. James Building, Jacksonville, Fla., U. S. A.

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THE REMOVAL OF THE ECLECTIC BOARD.

The prompt action taken by Governor Catts in removing from office the members of the Eclectic Board of Medical Examiners, following disclosures showing their unfitness for office, is a matter for general congratulation not only to the medical profession but to the general public as well. The recent disclosures brought out in a preliminary hearing before a justice's court in Jacksonville made it plain that irregularities of considerable magnitude were going on, and that they had extended over a period of many years. It is frequently, in fact, is generally a difficult matter to collect sufficient evidence in cases of this nature to secure conviction in a court of law. THE JOURNAL is not informed of the status quo of the case from a legal standpoint, but it is a matter of congratulation that when Governor Catts was furnished with the evidence secured against the members of the board he did not wait on legal technicalities to be fought out in the courts, but promptly removed the entire board from office, thus doing a service to the general public.

THE JOURNAL OF UROLOGY.

THE JOURNAL is in receipt of the initial copy of *The Journal of Urology, Experimental, Medical, Surgical.* The name, as stated in the foreword, "expresses briefly the aims, hopes and ambitions of the editors."

Dr. Hugh H. Young, of Johns Hopkins, is the editor of the new publication. It presents an attractive appearance, containing numerous original articles of great interest to those engaged in this specialty.

THE ATLANTIC BEACH MEETING.

A preliminary program of the forty-fourth annual session of the Florida Medical Association will appear in the next issue of THE JOURNAL. The meeting promises

to be the most largely attended session in the history of the Association. While the hotel accommodations are ample, we would urge all members to secure their reservations early. All communications concerning hotel accommodations should be addressed to Mr. H. M. Stanford, Atlantic Beach Hotel, Atlantic Beach, Florida. Watch for his full-page ad display appearing in the April number.

THE ANNUAL CONGRESS.

Following is the report of the delegate to the Annual Congress on Medical Education, Public Health and Medical Licensure, held in Chicago at the Hotel Congress, February 5 and 6, 1917:

The papers read at this congress and the detailed transactions are published in *Journal American Medical Association,* February 17th and 24th, and in the Association Bulletin of this section, therefore the scope of the work and the impressions gained by the writer only will be discussed. It is very evident that the work done by this section of The American Medical Association has resulted in more lasting good than is generally known. The higher standards in medicine in force in the United States today are largely due to the activities of these conferences. The low-grade medical school has no place in America today, though a few states like our own will accept most any credential for examination. The number of medical schools in this country have been cut in half in a little over ten years. The standard for entrance has been raised until now only six per cent of the graduates (graduates last year) are without the college educational requirements required for entrance into our best medical schools. The state universities are making it possible for the poor boy to get his course in medicine. There is very little call now for legislation to let this six per cent through, and why should there be? The latest stimulus to higher medical education in our country is the National Board of Medical Examination. This board is not political and its examiners are men of the highest type from our best medical centers. Passing that board is equivalent to the highest degree given anywhere in the United States. They ask the medical schools to send only six or eight of their best students, others cannot pass. Its certificate admits to the Mayo Foundation and the Army and Navy. The state laws in many states are being amended to accept this certificate for licensure without examination, and justly so. These men will be a credit to any section and they will not be thrown on the public by the hundreds. It may be some years before we get a request for half a dozen such licenses in Florida.

The need of better laws in Florida safeguarding the establishment of institutions of learning is forcibly brought out when we consider that anyone without money, equipment, degrees, education or any foundation whatsoever can apply for and establish a school or college in Florida and give degrees. New Jersey and Colorado have lately made laws covering this important subject and with the aid of the better men we should get such laws in Florida as will make it impossible for any school to issue degrees without it meaning something. The need of these laws in all the states was discussed.

The matter of Canadian schools admitting our graduates is one of growing importance and upon investigation it is found that no Canadian school is on a par with our best. Ontario since last year has modified its stand and other provinces will likely do so at an early date.

The matter of dealing with the medical cults is an important one. Some men believe that in time they kill themselves if left alone; however, some one has to suffer severely while they are in existence, and to let them die is a dangerous method. It is up to the people and to us to insist upon their training and make it equal to our own.

Single standards should be the slogan for all of us in dealing with the cults and insistence upon a common basis for those who diagnose, no matter what the treatment shall be. If a man has the preliminary training required by our Class A Medical Schools he is not likely to prescribe one-sided, foolish treatment or short cuts as taught in correspondence courses. It is only the inexperienced who look for miracles in medicine, and it is not long before the follower of any cult (if he is honest with himself) will be looking for every means known for the relief of the many complications in disease. In doing this he wishes to practice real medicine and with his lower standards seeks a back-door to practice *real* medicine. It is up to us to guard these routes.

Some time was devoted to a discussion of "The Problem of Higher Degrees in Medicine." Dr. Horace D. Arnold, the Dean of the Harvard Graduate School of Medicine, presented the subject and mentioned establishing a standard for specialists. Degrees higher than a Master's degree indicate special skill and some feel they should be recognized granting such degrees as D.P. (Med.), M.S. (Med.) and M.A. (Med.) corresponding to similar literary degrees. Dr. Vaughan, of Ann Arbor, took the ground that we should go very slow in this country granting higher degrees and mentioned that many times higher degrees were a handicap to a man.

A symposium covering "Economy of Time in Preliminary and Medical Education" took considerable of the time. At present the time of graduation of the average student is nearly 28 years and this is thought to be too long. This can be cut down two or three years by the right regulation of the undergraduate schools. Studies that overlap in the High Schools and Colleges can be much better regulated than at present. A system similar to the system abroad is being introduced by the introduction of the Junior High School. President Judson, of the University of Chicago, and Professor C. H. Judd demonstrated how very well this can be accomplished by a getting-together process. It is agreed that the student puts too much time on many subjects which he has no use for after entering the medical course. After all it is not knowledge so much we are after as the training of the mind.

The subject of Practical Examinations by State Examining Boards was opened by Dr. Walter P. Bowers, of the Massachusetts board. The result of the work along this line was given by a member of the Minnesota board. It is quite evident that for older men this is almost an indespensible form of examination for State Licensing Boards. These examinations cover laboratory work in a practical way, covering blood, urine, X-ray photographs, bandaging, pathological specimens and methods used in examination on the living subject. The method used by applicant is of the greatest of importance.

The importance of this conference can be judged by a study of the character of the men present and interested in the work. The following is a partial list of those in attendance at this congress: Dr. Horace D. Arnold, Boston; Dr. Frank Billings, Chicago; Dr. Walter P. Bowers, Boston; Dr. John M. Baldy, Philadelphia; Dr. H. M. Bracken, St. Paul; Dr. Robert C. Coffey, Portland; Dr. W. B. Cannon, Boston; Dr. W. S. Carter, Galveston; Dr. N. P. Colwell, Chicago; Dr. Isadore Dyer, New Orleans; Dr. Herbert Harlan, Baltimore; Dr. B. D. Harrison, Detroit; Dr. Samuel W. Lembert, New York City; Dr. C. N. Suttner, Walla Walla; Dr. Wm. D. Haggard, Nashville; Dr. Victor C. Vaughan, Ann Arbor, Mich., etc.

Florida is not a member of the Federation of State Medical Boards of the United States, but your delegate attended their session and feels that the Florida Board should become a member of this organization. Every state should have a word in the classification of Medical Schools and

in other ways it is a great help to the state board. If a man has a bad record in one state, it can better be passed on by this organization and his course watched before he gets a license in another state. This organization can also assist in making suggestions for a common standard for medical licensure in all of the states. The more every medical man can become interested in the subjects discussed at such meetings the more he is going to do to help in raising the standard of physicians in this country. The making of high character in the medical man is largely with ourselves, and it seems to me that the Florida State Medical Society has this in view when it sends a delegate to such a conference.

FRED J. WALTER, M. D.,
Daytona.

CURRENT VIEWS REGARDING THE TONSILS AND THEIR SURGICAL REMOVAL.

Nowadays when any organ of the body attains a previously unsuspected importance so that considerable professional attention is concentrated on it, the circumstances is soon reflected in the interest and expectations of the layman. This is seen, for example, in the popular attitude toward the tonsils and adenoids. Few untutored persons have any conception as to the purpose, not to say the location and anatomic relations, of these lymphoid tissues. The physician may counsel the removal of one of the structures with a clear understanding that he is urging what is, in a sense, an experimental operation which may remove a possible cause of disease in other organs. The layman, encouraged by the apparent innocuousness of the operative procedure, soon begins to look on tonsillectomy as a sort of panacea for the most diverse ills; and somehow this state of mind occasionally seems to weigh in the balance with the professional man himself. That the uses of these lymphoid structures are so little understood is no reason for counting every prominent tonsil or adenoid in persons of school age as a defect. Indeed, there seems to be a wholesome reaction against the operations on tonsils in youth merely because they are prominent and noticeable. At the Johns Hopkins Hospital, for example, the practice is to regard the tonsils and adenoids in children as physiologically important parts of the mechanism which protects the lower air passages from dust and organisms.[1] If there are no mouth-breathing, no evidence of damage to the ears, no chronic enlargement of the glands of the neck, no cystic condition of the adenoids known as Thornwald's disease, and none of the so-called "reflex neuroses," the removal of adenoids regardless of their size or appearance is not recommended.

On the other hand, recent years have witnessed a growing interest in management of diseased tonsils and a widespread appreciation that the germ of tonsillitis may hit in many spots far removed from the local seat of obvious disorder. Tonsillar and nasopharyngeal infections have of late frequently become related, for example, to infectious and rheumatoid arthritis, myositis and acute rheumatic fever, to chorea, to hyperplasia of the cervical glands, and even to nephritis. If these relationships and other indications of the involvement of the tonsils as portals of entry for harmful microorganisms could be convincingly established, the indications for the removal of the tonsils both as a prophylactic and as a therapeutic measure would become clearer and more rational. It is of unusual value, therefore, to have available a carefully digested study of the relation of tonsillar and nasopharyngeal infections to general systemic disorders, based on 1,000 cases in which operation was performed at the Johns Hopkins Hospital during the past five years.[1] An added importance is lent by the fact that these operations were not done in a haphazard way in hurried dispensary service without experi-

[1]Crowe, S. J.; Watkins, S. S., and Rothholz, Alma S.: Relation of Tonsilar and Nasopharyngeal Infections to General Systemic Disorders, Bull. Johns Hopkins Hosp., 1917, 28, 1.

enced anesthetists or assistants; they were performed under the rigorous routine of a surgical ward, and the cases were followed up in order to learn the subsequent history with respect to disorders supposed to be secondary to a chronic focus of infection in the upper air passages.

As a result of the experience now collated, Dr. Crowe and his associates have reached certain tentative conclusions which may be helpful in the contemplation of tonsillectomy. They assert that the operation should never be undertaken during the acute stage of tonsillar inflammation, as a cerebral abscess may result. Diabetes is as much a contraindication for tonsillectomy as it may be for any operation necessitating general anesthesia. Tonsillectomy is rarely of benefit in the chronic deforming types of arthritis, in many cases probably doing more harm than good. The Baltimore surgeons are further convinced that nothing is to be gained from a tonsillectomy during the acute stage of chorea, acute rheumatic fever or endocarditis. Their experience shows that even after the nose and throat have been put in normal condition by operative measures these diseases may recur. In any event the tonsils are not the only portals of entry for the etiologic organism, and their removal in an interval free from symptoms can be justified only on the plea of preventing further cardiac lesions which may result from subsequent acute tonsillitis. The frequency of heart and joint defects in chorea may justify such a prophylactic measure.

In infectious arthritis in which the periarticular changes predominate, and perhaps also in myalgia, the promise of helpfulness from tonsillectomy is greater. In the early stages of glomerular nephritis it may also be worthy of some consideration. The tonsils are the most common site of the chronic infections which give rise to a hyperplasia of the deep cervical lymph glands near the angle of the jaw. The enlargement of the glands will rarely subside after treatment of carious teeth and alveolar abscesses alone. It seems advisable, therefore, under such conditions to consider the removal of the tonsils in cases of persistent palpable glands at the angle of the jaw, particularly if the patient has some general systemic disorder. The majority of the enlargements are apparently due to a chronic pyogenic infection which will subside after tonsillectomy. The others are due, as a rule, to persistent tubercle bacilli.

Obviously the advisability of a tonsillectomy in any individual case depends on the malady and the general condition of the patient. As the Baltimore investigators express it, tonsillectomy alone will not cure tuberculous cervical adenitis, arthritis or glomerular nephritis. It is necessary in such cases to apply general hygienic measures as well, so as to increase the patient's resistance. If the tonsils are the primary focus of infection, their removal in suitable instances may materially alter the prognosis by preventing a constant reinfection. Skillful surgery is indispensable. A partial occlusion of the crypts, resulting from an incomplete tonsillectomy, as sometimes happens, may actually aggravate the symptoms of infection by producing a mechanically made focus of trouble. Despite the many uncertainties and unsolved problems which still exist, however, Crowe and his collaborators state that their records "tend to support the evidence of Billings and others in regard to the importance of focal infections in many of the general disorders seen by the internist, the pediatrician, and the general surgeon."—*Journal of the American Medical Association.*

ANOTHER SHORTAGE OF SALVARSAN.

The indications are that the supply of salvarsan and neosalvarsan in this country has again reached the point of exhaustion. To the medical profession, who know the unfortunate results of a shortage of salvarsan on the health of the present and future generations, the situation is an exasperating one. Is there no remedy? Is our govern-

ment impotent to relieve the condition? Congress made our patent law; it certainly has the power to suspend the patent on any preparation that the patentee is unable to, or does not, supply when such suspension is in the interest of public health. It is well known that at the time of the previous shortage the Dermatologic Research Laboratory of Philadelphia manufactured the product under the name of arsenobenzol.[1] It is presumed—at least hoped—that in the present shortage the laboratory will again manufacture the product. It should meet with no legal difficulty, as the agents for the salvarsan manufacturers have intimated that they would not object to such supply of the product at times when they themselves were not able to furnish it. But such a relief for the situation is not a permanent relief—it is a makeshift. Monopolies on medicaments such as diphtheria antitoxin, salvarsan and the like are against public interest. The United States has granted process and product patents on salvarsan: even if any one in this country produced a salvarsan product or derivative which would be more curative and more valuable—on account of being less toxic, for instance—the patentees could effectually prevent its manufacture and sale. Again it should be emphasized that the fact that a most important drug is unavailable is the result of an act of Congress, and Congress has the power to modify its action so that the remedy may be made available.—*Journal of the American Medical Associatoin.*

[1] A Canadian product, diarsenol, was also, and for that matter, is still available.

NATIONAL BOARD OF MEDICAL EXAMINERS.

The second examination to be given by the National Board of Medical Examiners will be held in Washington, D. C., June 13, 1917. The examination will last about one week.

The following states will recognize the certificate of the National Board: Colorado, Delaware, Idaho, Iowa, Kentucky, Maryland, North Carolina, New Hampshire, North Dakota and Pennsylvania. Favorable legislation is now pending in twelve of the remaining states.

A successful applicant may enter the Reserve Corps of either the Army or Navy without further professional examination, if their examination papers are satisfactory to a Board of Examiners of these services.

The certificate of the National Board will be accepted as qualification for admittance into the Graduate School of the University of Minnesota, including the Mayo Foundation.

Application blanks and further information may be obtained from the Secretary, Dr. J. S. Rodman, 2106 Walnut Street, Philadelphia.

CAMPAIGN AGAINST UNCLEAN DAIRY UTENSILS.

An active campaign against the unsterilized milk can, pail, strainer cloth, and separator, as contributing causes to high bacterial count in city milk, is to be carried on this season by the United States Department of Agriculture in cooperation with the health and milk officials of a number of cities. Already health officers in 150 localities have accepted the department's offer to demonstrate to their local milk producers a simple homemade sterilizer, costing not more than $15, which if used on the farm will help guard the milk against this initial and serious contamination. How great a bearing sterilization of milk utensils on the farm has on the bacterial content of milk is shown by experiments which have proved that the average milk can, when washed in the ordinary way, may contain over eight billion bacteria, and that almost every milk can so treated harbors millions of bacteria which give a high bacterial count and hastens the souring of milk.

The homemade sterilizer for dairy utensils which is to be demonstrated uses steam as a sterilizing agent. All that is required

to develop steam enough to sterilize the ordinary dairy utensils is a two-burner kerosene stove, and there is nothing about the device which calls for special skill in its effective use. The department has twenty of these sterilizers, described in Farmers' Bulletin 748, and has offered to supply an outfit for a two-weeks' demonstration to any local health or dairy official who will agree to show it in operation to the milk producers in his section.

The effectiveness of this sterilizer has been fully proved both in the laboratory and on the farm. In one experiment 10 gallons of fresh milk were divided into two parts. Five gallons, passed through a separator into a 5-gallon can, both utensils washed in the ordinary way, showed at the end of an hour 1,880,000 bacteria per cubic centimeter. The other 5 gallons, passed through a separator into a can, after both utensils had been washed and sterilized by means of the home-made sterilizer, showed only 24,000 bacteria per cubic centimeter.

The device, moreover, removes foul odors and leaves the utensils dry as well as sterilized. Experience shows that the bacterial count is thus materially reduced, while the producer finds that his milk does not sour so quickly and has an improved flavor.

The specialists of the Dairy Division are hopeful that the device, wherever it is demonstrated, will come into common use. It is believed that this sterilizer will find ready adoption among small dairymen because of its low cost of construction and operation, and because its use will tend to improve the quality and increase the keeping character of the milk.

A FEW POINTERS.

Pointers for members to remember when speaking to their representatives in the legislature:

Physicians have no selfish motives in asking for better medical laws to protect the lives of the people of Florida.

In asking for a single standard of education for men who diagnose disease, regardless of treatment, we are asking for what should appeal to anyone.

Our present law is very defective and has no power to convict a man guilty of gross criminal acts.

The late disgrace to the state by the members of the Eclectic Board is alone enough to show the people the need of a clean-up in this whole matter.

We ask to avoid multiple boards and multiple routes to men who heal.

That the men asking for special privileges are men from other states coming here for a short time to make money and have not the spirit possessed by the true physician.

Press the matter of single standards and the avoidance of back-door routes with low standards.

Reviews from Current Literature

EXPERIMENTAL STUDIES WITH MUSCICIDES AND OTHER FLY-DESTROYING AGENCIES.

Earle B. Phelps and Albert F. Stevenson. Hygienic Laboratory Bulletin, No. 108, December, 1915.

After describing the methods of their technique and the results in using poisonous and sticky fly-destroying agencies they come to the following conclusions:

The use of muscicides or fly poisons has many distinct advantages of combating the fly nuisance within the household. A serious drawback has been the extremely poisonous character of these substances and the danger, especially to children, attending their use.

Potassium dichromate and quassia syrup are of little value.

Formaldehyde, 0.5 to 1 per cent, equivalent to 1.25 to 2.5 per cent of 40 per cent solution sold as formalin was found to be

more efficient than the standard arsenite solution.

A 1 per cent aqueous solution of sodium salicylate is almost as efficient as the formaldehyde solution.

At midsummer temperature the efficiency of these solutions is slightly greater than solutions made from commercial poison papers. E. C. B.

EXPERIMENTAL CONVICT ROAD CAMP.

George D. Steele. Eng. Record, Vol. 75, No. 7, p. 250.

The problem of labor camp sanitation has for some time past been of growing importance and sanitarians will therefore welcome the article by Mr. Steele.

Aside from the impressive economic points brought out in handling convict labor, the sanitary condition prevailing at this camp in Seaborn county, Georgia, is equally as impressive and important to those of the medical profession having similar institutions under their care.

The average population of the camp has been forty men convicts since January 10, 1916; three-tenths of one per cent have had to have medical attention. Undoubtedly this is due to the excellent sanitary conditions prevailing.

The keynote of the camp is sanitation and comfort. The buildings were designed with this in view and the discipline was carried out with the same end in mind. The results were successful, both from a health and economic standpoint. E. C. B.

COMMISSION ON MILK STANDARDS.

Third Report of the New York Milk Committee. Public Health Reports, U. S. P. H. S., Feb. 16, 1917, p. 271.

The question of producing and selling milk of high sanitary quality is very fully gone into in this report. The New York Committee has considered and recommended standards, not only for New York City but also for cities of all sizes.

A brief summary of their recommendations follow:

CHEMICAL STANDARDS.

Cow's Milk—8.5 per cent solids not fat and 3.25 per cent milk fat.

Skim Milk—8.75 per cent solids not fat.

Cream—Not less than 18 per cent milk fat.

BACTERIAL STANDARDS.

Raw Milk—Grade A—Milk shall not exceed 10,000 bacteria per c.c. at the time of delivery to the consumer.

Pasteurized Milk—Shall be produced from milk at no time having more than 200,000 bacteria per c.c. and after pasteurization shall not exceed 10,000 bacteria per c.c. at the time of its delivery to the consumer.

Grade B—From milk at no time containing more than 1,000,000 bacteria per c.c. pasteurized so that the bacterial count shall not exceed 50,000 per c.c.

Grade C—Milk with a bacterial count exceeding 1,000,000. To be sold for cooking and manufacturing purposes only.

The committee also recommends standards for the following milk products: Cream, butter, ice cream, condensed milk, skim milk and buttermilk.

They also make recommendations for inspection of dairies and manufacturing plants, for laboratory methods in controlling the licensing of dealers and supervising dairy herds.

The standards as given are a distinct step in advance. It is to be hoped that physicians and health officers will carefully consider these standards when advocating laws and ordinances dealing with the milk problem. E. C. B.

NEW AND NONOFFICIAL REMEDIES.

MERCURIC BENZOATE. — When mercuric benzoate is dissolved in sodium chloride solution for injection purposes a complex mercuric compound is produced in which the mercury is a part of the acid radical. It is safe to assume that the therapeutic effect of a given weight of mercury as mercury benzoate in a stated volume of sodium

chloride solution will be the same as that of the same weight of mercury in the form of mercuric chloride in the same volume of sodium chloride solution. (*Jour. A. M. A.*, Dec. 30, 1916, p. 2030.)

THE STATUS OF ANTIPNEUMOCOCCUS SERUM.—The injection of the proper antipneumococcus serum in pneumonia caused by pneumococcus Type 1 is believed to be beneficial, but the serum treatment of pneumonia is still in the experimental stage. The pneumococci fall into various groups according to their immunologic relations and the first requisite for a rational use of the serum treatment of pneumonia is the determination of the particular type of the pneumococcus concerned in a given case. (*Jour. A. M. A.*, Dec. 30, 1916, p. 2030.)

Publisher's Notes

BETZ NEW HOSPITAL CATALOGUE.

The Frank S. Betz Company have recently issued a new hospital catalogue, complete in every detail. This company is one of the staunchest supporters of the state-owned Journals and has adopted a liberal advertising policy toward them. As we have frequently pointed out to our readers, advertisers do not use our columns to rid themselves of a surplus of cash but to replenish their coffers. THE JOURNAL has never solicited and does not wish at this time complimentary advertising. We believe we have something to offer the advertiser, and when we accept an advertising contract satisfy ourselves he has something to offer our readers. Bearing the foregoing in mind, we urge our readers to write for the catalogue from this firm and in purchasing office or hospital equipment to remember those who remember us. Let it be known in doing so that your purchases are a direct response to advertising in your State Journal.

A WIDELY USEFUL SOAP.

Most medical practitioners are doubtless familiar in a general way with the properties and purposes of Germicidal Soap (McClintock's formula)—a product which has been marketed for many years by Parke, Davis & Co., and which appears to acquire a constantly widening sphere of usefulness as time passes.

In obstetrics and gynecology Germicidal Soap is a valuable antiseptic, deodorant and lubricant for the examining finger or instruments.

In surgery it is an admirable general disinfectant. It can be used to prepare antiseptic solutions without the necessity of measuring or weighing and without waste. For sterilizing hands, instruments and site of operation it is unsurpassed. The germicide contained in it is more powerful than mercuric chloride or phenol, and it does not coagulate albumin.

In office practice Germicidal Soap is efficacious in the treatment of parasitic diseases and as a disinfectant for the hands after examinations.

Other ways in which the soap may be advantageously employed are these: to cleanse wounds, ulcers, etc.; to lubricate sounds and specula; to disinfect surface lesions; to control itching in skin affections; to make solutions for the vaginal douche; to destroy the odor of hyperidrosis; to cleanse the hair and scalp and to remove and prevent dandruff; to disinfect vessels, utensils, etc.; to wash and sterilize bedlinen, handkerchiefs and other appurtenances of the sick room.

From the foregoing it will be seen that Germicidal Soap, P. D. & Co., is more than a soap—more than a germicide. It is, in fact, an antiseptic, disinfectant, deodorant, sterilizer, lubricant and detergent—all in one. It has been called "the soap of a hundred uses." The designation is not inapt.